

What is claimed is:

1. A storage system for the stocking of objects in a process environment comprising:

5 a storage enclosure for storing objects comprising a plurality of storage shelves, each shelf having at least one storage location;

a multi-axis robot mounted to the storage enclosure in an inverted orientation;

10 an end effector connected to the robot suitable for grasping the objects;

at least one load port; and

a controller for controlling the robot movement;

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whereby the robot transfers objects between the load port and the storage locations under control of the controller.

20 2. The storage system of claim 1 wherein each storage shelf further comprises a sensor to detect the presence of an object.

3. The storage system of claim 1 further comprising  
a process station for performing a process on the stored objects.

25 4. The storage system of claim 1 wherein the end effector has one additional degree of freedom.

5. The storage system of claim 1 wherein the controller executes a teaching sequence to map the location of features within the storage enclosure.

30 6. A storage system for the stocking of substrate carrier pods in a process environment comprising:

a storage enclosure for storing objects comprising a plurality of storage shelves, each shelf having at least one storage location;

5 a multi-axis robot attached in an inverted orientation to a linear sliding stage, the linear sliding stage attached to the storage enclosure;

an end effector suitable for grasping the objects connected to the robot and having at least one axis of motion;

10 at least one load port; and

a controller for controlling the robot movement;

15 whereby the robot transfers objects between the load port and the storage locations under control of the controller.

7. The storage system of claim 6 further comprising a process station for performing a process on the substrate carrier pods.

20 8. The storage system of claim 6 further comprising a sliding door with a first position substantially covering the load port and a second position allowing access to the load port.

9. The storage system of claim 6 further comprising:

25 an extended storage section attached to the storage enclosure;

and wherein the linear sliding stage allows the multi-axis robot to travel linearly through the storage system including the extended storage section.

30 whereby the extended storage section provides additional storage capacity for the storage system.